

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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Title : CONTENT-TARGETED ADVERTISING USING COLLECTED USER BEHAVIOR DATA

Mail Stop Appeal Brief - Patents

Commissioner for Patents
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BRIEF ON APPEAL

(1) Real Party in Interest

Google Inc., the assignee of record of the entire interest in this application, is the real party in interest.

(2) Related Appeals and Interferences

None.

(3) Status of Claims

Claims 109-156 are pending, with claims 109, 125, and 141 being independent. Claims 109-156 have been rejected, and the rejections of all of these claims are appealed.

(4) Status of Amendments

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No amendments have been filed subsequent to the final rejection dated June 14, 2010. A listing of the claims is provided in the Appendix of Claims section.

(5) Summary of Claimed Subject Matter

In the discussion below, reference numerals and references to particular portions of the application are inserted for illustrative purposes only and are not meant to limit to the scope of the claims. The claimed subject matter is directed to methods and systems for modifying advertisement performance information for an advertisement based on concept performance information for a concept to which the advertisement corresponds.

In some aspects, as recited in independent claim 109, advertisements that are available for presentation with a document are identified (page 29, lines 29-30 and page 33, lines 9-10). At least one processor receives initial advertisement performance information for the advertisements (page 29, lines 29-30; page 33, lines 10-12; and page 34, lines 21-25). The advertisement performance information for each advertisement specifies a measure of performance that is computed based on previous presentations of the advertisement (page 29, lines 29-30; page 33, lines 10-12; and page 34, lines 21-25). At least one processor identifies one or more concepts to which the document is relevant (page 11, lines 23-30; page 13, lines 20-30; page 33, lines 9-10; and page 34, lines 17-18). The concepts are identified based on content of the document (page 11, lines 23-30 and page 13, lines 20-30). At least one processor receives concept performance information for each identified concept for the document (page 30, lines 2-5 and page 34, lines 21-25). The concept performance information represents an aggregate performance of advertisements that were presented with the document and corresponding to the

concept (page 25, lines 5-29; page 33, lines 21-22; page 35, lines 1-15). At least one processor modifies the initial advertisement performance information for an advertisement (page 35, line 19 – page 20, line 11). The initial advertisement performance information is modified using the concept performance information for an identified concept that corresponds to the advertisement (page 35, line 19 – page 20, line 11). At least one of the advertisements is forwarded based on the modified advertisement performance information (page 37, lines 7-9).

In another aspect, as recited in independent claim 125, an apparatus includes one or more processors that are connected to a storage device (page 37, line 23 – page 38, line 9). The processors are configured to identify advertisements that are available for presentation with a document (page 29, lines 29-30 and page 33, lines 9-10) and to receive initial advertisement performance information for the advertisements (page 29, lines 29-30; page 33, lines 10-12; and page 34, lines 21-25). The advertisement performance information for each advertisement specifies a measure of performance computed based on previous presentations of the advertisement (page 29, lines 29-30; page 33, lines 10-12; and page 34, lines 21-25). The processors are also configured to identify one or more concepts to which the document is relevant (page 11, lines 23-30; page 13, lines 20-30; page 33, lines 9-10; and page 34, lines 17-18), to identify the concepts based on content of the document (page 11, lines 23-30 and page 13, lines 20-30), and to receive concept performance information for each identified concept for the document (page 30, lines 2-5 and page 34, lines 21-25). The concept performance information represents an aggregate performance of advertisements that were presented with the document and that correspond to the concept (page 25, lines 5-29; page 33, lines 21-22; page 35, lines 1-15). The processors are further configured to modify the initial advertisement performance

information for an advertisement (page 35, line 19 – page 20, line 11), to modify the initial advertisement performance information using the concept performance information for an identified concept corresponding to the advertisement (page 35, line 19 – page 20, line 11), and to forward at least one of the advertisements based on the modified advertisement performance information (page 37, lines 7-9).

In another aspect, as recited in independent claim 141, a storage device stores a computer program that includes one or more code segments (page 37, line 23 – page 38, line 9). When executed, the code segments cause at least one processor to identify advertisements that are available for presentation with a document (page 29, lines 29-30 and page 33, lines 9-10) and to receive initial advertisement performance information for the advertisements (page 29, lines 29-30; page 33, lines 10-12; and page 34, lines 21-25). The advertisement performance information for each advertisement specifies a measure of performance computed based on previous presentations of the advertisement (page 29, lines 29-30; page 33, lines 10-12; and page 34, lines 21-25). The code segments also cause the processor to identify one or more concepts to which the document is relevant (page 11, lines 23-30; page 13, lines 20-30; page 33, lines 9-10; and page 34, lines 17-18). The concepts are identified based on content of the document (page 11, lines 23-30 and page 13, lines 20-30). The code segments also cause the processor to receive concept performance information for each identified concept for the document (page 30, lines 2-5 and page 34, lines 21-25). The concept performance information for each concept represents an aggregate performance of advertisements that were presented with the document and that correspond to the concept (page 25, lines 5-29; page 33, lines 21-22; page 35, lines 1-15). The code segments further cause the processor to modify the initial advertisement performance

information for an advertisement (page 35, line 19 – page 20, line 11). The initial advertisement performance information is modified using the concept performance information for an identified concept that corresponds to the advertisement (page 35, line 19 – page 20, line 11). The code segments also cause the processor to forward at least one of the advertisements based on the modified advertisement performance information (page 37, lines 7-9).

(6) Grounds of Rejection to be Reviewed on Appeal

Claims 109-156 stand rejected under 35 U.S.C. §103(a) based on Gerace (U.S. Patent No. 5,848,396) in view of Graham (U.S. Patent Publication No. 20060122884).

(7) Argument

I. Gerace, Graham and asserted combinations thereof fail to describe or suggest modifying the initial advertisement performance information, as recited by claim 109, and as similarly recited by independent claims 125 and 141

Appellant requests reversal of the rejection of claim 109 and its dependent claims 110-124 because Gerace, Graham, and asserted combinations thereof fail to describe or suggest “modifying, by at least one processor, the initial advertisement performance information for an advertisement using the concept performance information for an identified concept corresponding to the advertisement,” as recited by claim 109.

The claimed modification of advertisement performance information is advantageous, for example, “because ads (or ad groups) and/or advertisers may be transient, in which case it may be difficult, if not impossible, to gather statistically significant amount of user behavior data with

respect to a given ad (or ad group) for a given document. Since there may be a relatively small number of tracked user behavior (e.g., clicks) compared to the number of documents (as identified by their URLs) and ads, a user behavior (click) statistics matrix may be rather sparse. Some ads have very few clicks and impressions...." However, the limited data points can be used with "performance parameter estimation (extrapolation) operations 496, 596 to populate user behavior (e.g., click) statistics of ads for which there is no (or very little) user behavior data for the document (or host). These operations 496, 596 may use concepts as a bridge for propagating statistics from ads to [other] ads." Application at 34.¹ The relied-upon art does not disclose or suggest such functionality for propagating statistics to ads having little or no user behavior data for the document, nor does it disclose or suggest the subject matter of the claims consistent with this functionality.

At pages 2 and 3 of the Final Office Action of June 14, 2010 ("final action"), the Examiner states that "Gerace discloses a method, comprising ... modifying ... the advertisement performance information for at least one of the one or more advertisements using the determined content concept performance information for the content concept associated with the at least one of the one or more advertisements (18:10-26)."

At column 18, lines 1-26 Gerace recites:

As discussed above, sponsors have the ability to place ads according to demographic profile. To do so, advertisers/sponsors complete a template, (preferably in the Ad Series Objects 33c) which allows them to list certain criteria as required, and to weight other criteria by importance. To ensure ads are shown to the appropriate target users, **the sponsor then selects a minimum total weight**

¹ In referring to the specification above, this brief does not intend to limit the scope of the claims to the example implementations shown in the drawings and described in the specification. Rather, the entitlement to have the claims interpreted broadly, to the maximum extent permitted by statute, regulation and applicable case law, is expressly affirmed.

which a user's demographic/psychographic profile must achieve before the advertisement is shown to the user.

To ensure that sponsors achieve the optimal result from the ads they place, program 31 combines regression analysis with the above weighting technique to achieve real-time, **automatic optimization** as discussed previously. Under this auto-targeting system, an ad package is shown to general users. After a large number (e.g., 10,000) hits, **program 31 runs a regression** on a subject Ad Package Object 33b to see what characteristics are important, and who (type of user profile) the ad appeals to the most. Program 31 then **automatically enters weighting information based on that regression** to create a targeted system and runs the advertisement (Ad Package Object 33b) again in front of this new targeted group. Program 31 then runs a regression every 10,000 hits, for example, including a group of 500 general people as a control, and adjusts the weighting. This continues until the Ad Package is exhausted (i.e., the number of hits and click throughs are achieved).

This portion of Gerace does not describe or suggest “modifying, by at least one processor, the initial advertisement performance information for an advertisement using the concept performance information for an identified concept corresponding to the advertisement.” At most, this portion of Gerace discloses that “after a large number (e.g., 10,000) hits, program 31 runs a regression on a subject Ad Package Object 33b [i.e., an advertisement] to see what characteristics are important, and who (type of user profile) the ad appeals to the most. Program 31 then automatically enters weighting information based on that regression to create a targeted system and runs the advertisement.”

As described by Gerace, advertisers are provided “the ability to place ads according to demographic profile” by “completing a template, (preferably in the Ad Series Objects 33c) which allows them to list certain criteria as required, and to weight other criteria by importance.” At column 12, lines 28-31, Gerace notes that “**the sponsor specifies** in Ad Series Object 33c the required and/or preferred **psychographic and/or demographic criteria** and relative importance (e.g., weight) with respect to each criterion.” Thus, the criteria that are weighted by Gerace are

“psychographic and demographic criteria” for targeting users. Therefore, the “automatically enter[ed] weighting information” of Gerace is weighting information for “psychographic and demographic criteria,” which is not the same as the “initial advertisement performance information.” This is because the “psychographic and demographic criteria” of Gerace do not specify “a measure of performance computed based on previous presentations of the advertisement,” as recited by claim 109. Rather, the “psychographic and demographic criteria” represent “characteristics of users.” Gerace at Col. 2, line 47. One of ordinary skill in the art would readily appreciate that characteristics of users do not measure the performance of advertisements. Thus, Gerace’s modification of the relative importance of the psychographic and demographic targeting criteria do not constitute modification of “the initial advertisement performance information for an advertisement using concept performance information for an identified concept corresponding to the advertisement,” as recited by claim 109.

At page 5 of the final action, the Examiner states that “it is obvious that Gerace can track performance for different page content/concepts/topics and ad content relevance,” and that “one would be motivated to do this to better target relevant ads.” Even if the Examiner’s interpretation of Gerace were proper (which appellant does not concede), tracking advertisement performance is not the same as “modifying … the initial advertisement performance information for an advertisement using the concept performance information for an identified concept corresponding to the advertisement,” as recited by claim 109.

According to claim 109, the **“advertisement performance information for each advertisement specifie[s] a measure of performance computed based on previous presentations of the advertisement,”** and it is this advertisement performance information that is modified by

the concept performance information. According to claim 109, the **concept performance information** represents “an aggregate performance of advertisements that were presented with the document and corresponding to the concept.” The concept performance information for a document represents, on a per-concept basis, the aggregate performance of multiple advertisements that were presented with the document. According to claim 109, the initial advertisement performance information for a particular advertisement (i.e., a measure of performance that is computed based on previous presentations of the particular advertisement) is modified using the concept performance information. Thus, the initial advertisement performance information for the particular advertisement can be modified even if the particular advertisement has not been presented with the document (e.g., based on changes in the aggregate measure of performance for other advertisements that were presented with the document). One of ordinary skill in the art would readily appreciate that merely tracking advertisement performance, as suggested by the Examiner in the final action, would not result in a similar modification.

In the final action, the Examiner noted that Graham “discloses concept/topic for documents and presenting relevant ads (Fig. 1c; 9a; claim 27) and also relevance scores ([32, 39, 47-49]).” Even if the Examiner’s interpretations of the cited portions of Graham were proper (which appellant does not concede), Graham still fails to cure the deficiencies of Gerace, as described above, because the disclosure of presenting relevant ads and the disclosure of relevance scores are not the same as “modifying … initial advertisement performance information for an advertisement” using “aggregate performance of advertisements that were presented with the document” and that correspond to the concept. For example, none of the

relied-upon portions of Graham disclose performance measures (e.g., click-through-rates) for advertisements that have been presented with a particular document. Rather, the relied-upon portions of Graham note a manner in which concepts of an advertisement can be compared to concepts associated with documents and/or concepts associated with a user to determine concept similarity.

Claim 27 of Graham recites:

An apparatus for determining if an advertising [sic] is relevant to a web document, the apparatus comprising:
at least one memory having program instructions;
at least one processor configured to execute the program instructions to perform operations of:
identifying one or more advertisement-related concepts corresponding to the advertisement;
analyzing content of the web document to identify one or more document-related concepts for the web document;
comparing the one or more advertisement-related concepts to the one or more document-related concepts to determine if a match exists; and
determining that the advertising is relevant to the web document if a match exists.

According to claim 27, “advertisement-related concepts” are compared to “document-related concepts to determine if a match exists,” and a determination is made “that the advertising is relevant to the web document if a match exists.” Graham’s “comparing ... advertisement-related concepts to ... document-related concepts to determine if a match exists,” even when combined with the disclosure of Gerace, does not result in the elements of claim 109. For example, the combination of Gerace and Graham still fails to disclose “**modifying**, by at least one processor, the **initial advertisement performance information** for an advertisement using the **concept performance information** for an identified concept corresponding to the advertisement,” as recited by claim 109 because claim 27 fails to provide a suggestion that advertisement performance information is modified.

The Examiner has also cited paragraphs 32, 39, and 47-49 of Graham in support of the rejection of claim 109. Paragraph 0032 recites:

[0032] FIG. 1C illustrates a simplified diagram of a representative search technique in a particular embodiment according to the present invention. This diagram is merely an example which should not limit the scope of the claims herein. One of ordinary skill in the art would recognize many other variations, alternatives, and modifications. FIG. 1C shows a first portion of an example document 105, viewable by a user. Document portion 105 includes several highlighted words. These highlighted words comprise a context that causes the display of a first advertisement 107, "Ad 345" because of the correspondence between the concepts in this advertisement and the concepts in the contents of the document portion 105. Later, the user views a new area of the document, document portion 109. These highlighted words comprise a context that causes the display of a second advertisement 111, "Ad 938" because it is now the most relevant advertisement to the concepts being viewed by the user. If the use of only the highlighted words does not yield an advertisement with a sufficient relevancy score, R_j , other phrases contained in the viewing area can be used as the matching criteria for the collection of advertising concepts.

Paragraph 0032 of Graham notes, for example, that specified words on a document "comprise a context that causes display of the first advertisement 107, 'Ad345' because of the correspondence between the **concepts in this advertisement** and the **concepts in the contents of the document portion 105**." Paragraph 0032 describes selection of advertisements based on their relevancy "to the concepts being viewed by the user," but paragraph 0032 fails to teach or suggest that "advertisement performance information ... specifying a measure of performance [and] computed based on previous presentations of the advertisement" is modified "using concept performance information" that represents "an aggregate performance of advertisements that were presented with the document and corresponding to the concept."

Paragraph 0039 similarly fails to cure the deficiencies of Gerace. Paragraph 0039 recites:

[0039] In a particular representative embodiment according to the present invention, advertising can be targeted based upon the user's concepts of interest and how relevant these concepts are for a particular document. Relevance can be determined using a scoring or other method as described below. This information, in conjunction with the actual content of the document, can be used to target advertising to users. Concepts, which define sets of interests, can be collected from user input or other mechanisms. In a presently preferable embodiment, user privacy can be maintained because user profiles are not shared with advertisers. User profiles can be stored locally on the client computer, or at an ISP server, or a proxy service, for example. In some specific embodiments, advertisers can be provided statistical information recorded by the user's browser, for example.

According to paragraph 0039, "advertising can be targeted based upon **the user's** concepts of interest and how relevant these concepts are for a particular document." However, targeting advertisements based on relevance to a user's concepts of interest does not teach, describe, or suggest modification of advertisement performance measures for an advertisement using "aggregate performance of advertisements that were presented with the document" and that correspond to the concept.

Paragraphs 0047-0049 also fail to cure the deficiencies of Gerace. Paragraphs 0047-0049 recite:

[0047] The c_i value provides a bias to the $S_{i,j}$ value towards higher scoring user concepts. Given all relevant user concepts and all relevant advertising concepts, a matrix can be constructed having similarity values for each combination of user/advertising concepts. Table 1 illustrates a representative example of such a matrix in one specific embodiment.

TABLE 1

<u>Comparison matrix</u>						
Concept/Ad	C ₁	C ₂	C ₃	...	C _i	Relevancy
A ₁	S _{1, 1}	S _{2, 1}	S _{3, 1}	...	S _{m, 1}	R ₁
A ₂	S _{1, 2}	S _{2, 2}	S _{3, 2}	...	S _{m, 2}	R ₂
A ₃	S _{1, 3}	S _{2, 3}	S _{3, 3}	...	S _{m, 3}	R ₃
...
A _j	S _{1, n}	S _{2, n}	S _{3, n}	...	S _{m, n}	R _n

[0048] In this representative example, a collection of the relevant user concepts, {C₁, C₂, C₃, . . . , C_i}, and relevant advertising concepts, {A₁, A₂, A₃, . . . , A_j} are included. The individual similarity value is represented for each **comparison between user concept and advertising concept** as S_{i,j}, where i is the user concept index and j is the advertising concept index. Next, in a step 424, a **"best" advertising concept given all of the user concepts can be determined**. In this step, the comparison value generated in step 406 of FIG. 4A between advertising and document, a_j, is used to bias the user/advertising concept comparison value S_{i,j} towards **advertising concepts which are more similar to the current document**. This combination for each advertising concept yields the final similarity measure used to rank the advertisements:

$$R_j = \left(\sum_i^m S_{ij} \right) \times a_j$$

[0049] If multiple advertisements with the same R_j value are present, the a_j value can be used to "break the tie," and the advertising concept with the higher score with respect to the document will be delivered to the user's browser. If R_j does not exceed some threshold, e.g. 20% relevancy, the advertisements can be ranked using the original content based value a_j. In this case, the better solution is to deliver an advertisement that is at least similar in content to the current document. Note that in the case where neither the R_j value nor the a_j value surpass a threshold, then either no advertisement is displayed, or other information in the advertisement area such as relevant headline news or news related to the user's profile can be displayed.

Paragraphs 0047-0049 note that advertisement concepts and user concepts can be compared to select an advertisement that is associated with "advertising concepts which are more

similar to the current document.” However, this portion of Graham still fails to disclose that a performance measure (e.g., an estimated click through rate) for an advertisement is **modified** using the “aggregate performance of advertisements that were presented with the document” and that correspond to the concept.

The foregoing demonstrates that the disclosure of paragraphs 0032, 0039, and 0047-0049 of Graham fail to cure the deficiencies of Gerace. Additionally, neither Gerace nor Graham provides any reason to modify the combination of Gerace and Graham to arrive at the subject matter of claim 109.

For at least the reasons provided above, Gerace, Graham, and combinations thereof fail to describe or suggest “modifying, by at least one processor, the initial advertisement performance information for an advertisement using the concept performance information for an identified concept corresponding to the advertisement,” as recited by independent claim 109. Accordingly, reversal of the rejections of claims 109-124 is requested.

Independent claim 125 recites features similar to those discussed above with respect to independent claim 109. Specifically, claim 125 recites “one or more processors that are configured to ... modify the initial advertisement performance information for an advertisement using the concept performance information for an identified concept corresponding to the advertisement.” Accordingly, for reasons similar to those set forth above with respect to claim 109, reversal of the rejection of claim 125 and its dependent claims is requested.

Independent claim 145 recites features similar to those discussed above with respect to independent claim 109. Specifically, claim 141 recites “a storage device storing a computer program comprising one or more code segments that, when executed, cause at least one

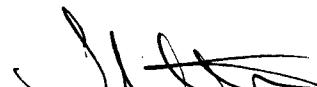
processor to ... modify the initial advertisement performance information for an advertisement using the concept performance information for an identified concept corresponding to the advertisement." Accordingly, for reasons similar to those set forth above with respect to claim 109, reversal of the rejection of claim 141 and its dependent claims is requested.

II. Conclusion and Relief

For at least the reasons provided above, appellant respectfully requests reversal of the pending rejections.

The Appeal Brief filing fee is paid concurrently herewith on the Electronic Filing System (EFS) by way of deposit account authorization. Please apply any other charges or credits to Deposit Account No. 06-1050.

Respectfully submitted,



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Appendix of Claims

1-108. (Cancelled)

109. (Previously Presented) A method, comprising:

identifying advertisements that are available for presentation with a document;

receiving, by at least one processor, initial advertisement performance information for the advertisements, the advertisement performance information for each advertisement specifying a measure of performance computed based on previous presentations of the advertisement;

identifying, by at least one processor, one or more concepts to which the document is relevant, concepts being identified based on content of the document;

receiving, by at least one processor and for each identified concept for the document, concept performance information representing an aggregate performance of advertisements that were presented with the document and corresponding to the concept;

modifying, by at least one processor, the initial advertisement performance information for an advertisement using the concept performance information for an identified concept corresponding to the advertisement; and

forwarding, based on the modified advertisement performance information, at least one of the advertisements.

110. (Previously Presented) The method of claim 109, wherein the advertisement performance information includes selection information and impression information for the advertisements.

111. (Previously Presented) The method of claim 109, wherein the document is a Web page identified by a URL.

112. (Previously Presented) The method of claim 109, wherein modifying the initial advertisement performance information for an advertisement comprises:

selecting an identified concept to which the advertisement corresponds; and
receiving concept performance information for the selected concept, the content performance information being computed based on performance of other advertisements that were presented with the document and correspond to the selected concept.

113. (Previously Presented) The method of claim 109, wherein receiving, for each identified concept for the document, the concept performance information comprises determining, for each identified concept for the document, concept performance information using document specific advertisement performance information for the identified advertisements corresponding to the identified concept.

114. (Previously Presented) The method of claim 113, further comprising:
determining, for each identified concept for the document, document specific advertisement performance information for a first advertisement and a second advertisement; and
determining, for each identified concept for the document, concept performance information using the document specific advertisement performance information for the first advertisement and the second advertisement corresponding to the identified concept.

115. (Previously Presented) The method of claim 109, wherein the concept performance information for a concept includes one or more of selection information and impression information for advertisements presented with the document and corresponding to the concept.

116. (Previously Presented) The method of claim 109, further comprising determining a confidence measure for the advertisement performance information, the confidence measure representing a confidence level for the advertisement performance information relative to other advertisement performance information.

117. (Previously Presented) The method of claim 116, wherein determining the confidence measure for the advertisement performance information comprises determining a confidence measure for the advertisement performance information based on one or more of the age of data included in the advertisement performance information and the amount of the data included in the advertisement performance information.

118. (Previously Presented) The method of claim 109, wherein the advertisement for which the initial advertisement performance information is modified is included with the forwarded advertisements.

119. (Previously Presented) The method of claim 109, wherein the advertisement for which the initial advertisement performance information is modified is different from the forwarded advertisements.

120. (Previously Presented) The method of claim 109, wherein forwarding, based on the modified advertisement performance information, at least one of the advertisements comprises:

comparing the modified advertisement performance information for an advertisement to a threshold;

determining that the modified advertisement performance information exceeds the threshold; and

forwarding the advertisement based on the modified advertisement performance information exceeding the threshold.

121. (Previously Presented) The method of claim 109, wherein:
identifying the one or more content concepts to which the document is relevant comprises identifying a first concept and a second concept to which the document is relevant; and
the method further comprising determining that an advertisement is associated with the first concept and the second concept for the document.

122. (Previously Presented) The method of claim 109, wherein:

receiving the initial advertisement performance information for the advertisements comprises receiving advertisement targeting information for the advertisements; and receiving the concept performance information comprises receiving concept targeting performance information representing an aggregate performance of advertisements targeted according to the advertisement targeting information that were presented with the document based on the advertisement targeting information.

123. (Previously Presented) The method of claim 109, further comprising:
identifying a first advertisement that does not have initial advertisement performance information;
determining that at least one of the identified concepts for the document correspond to the first advertisement;
receiving concept performance information for the at least one of the one identified concepts corresponding to the first advertisement; and
determining, based on the received concept information for the at least one of the identified concepts associated with the first advertisement, estimated advertisement performance information for the first advertisement.

124. (Previously Presented) The method of claim 123, wherein determining the estimated advertisement performance information for the first advertisement comprises determining a weighted-sum of the content concept information for the at least one of the identified concepts corresponding to the first advertisement.

125. (Previously Presented) An apparatus comprising one or more processors connected to a storage device, wherein the one or more processors are configured to:

- identify advertisements that are available for presentation with a document;
- receive initial advertisement performance information for the advertisements, the advertisement performance information for each advertisement specifying a measure of performance computed based on previous presentations of the advertisement;
- identify one or more concepts to which the document is relevant, concepts being identified based on content of the document;
- receive, for each identified concept for the document, concept performance information representing an aggregate performance of advertisements that were presented with the document and corresponding to the concept;
- modify the initial advertisement performance information for an advertisement using the concept performance information for an identified concept corresponding to the advertisement; and
- forward, based on the modified advertisement performance information, at least one of the advertisements.

126. (Previously Presented) The apparatus of claim 125, wherein the advertisement performance information includes selection information and impression information for advertisements.

127. (Previously Presented) The apparatus of claim 125, wherein the document is a Web page identified by a URL.

128. (Previously Presented) The apparatus of claim 125, wherein the one or more processors are configured to modify the initial advertisement performance information for an advertisement by:

selecting an identified concept to which the advertisement corresponds; and receiving concept performance information for the selected concept, the content performance information being computed based on performance of other advertisements that were presented with the document and correspond to the selected concept.

129. (Previously Presented) The apparatus of claim 125, wherein the one or more processors are configured to receive, for each identified concept for the document, the concept performance information comprises determining, for each identified concept for the document, concept performance information using document specific advertisement performance information for the identified advertisements corresponding to the identified concept.

130. (Previously Presented) The apparatus of claim 129, wherein the one or more processors are further configured to:

determine, for each identified concept for the document, document specific advertisement performance information for a first advertisement and a second; and

determine, for each identified concept for the document, concept performance information using the document specific advertisement performance information for the first advertisement and the second advertisement corresponding to the identified concept.

131. (Previously Presented) The apparatus of claim 125, wherein the concept performance information for a concept includes one or more of selection information and impression information for advertisements presented with the document and corresponding to the concept.

132. (Previously Presented) The apparatus of claim 125, wherein the one or more processors are further configured to determine a confidence measure for the advertisement performance information, the confidence measure representing a confidence level for the advertisement performance information relative to other advertisement performance information.

133. (Previously Presented) The apparatus of claim 132, wherein the one or more processors are configured to determine the confidence measure for the advertisement performance information by determining a confidence measure for the advertisement performance information based on one or more of the age of data included in the advertisement performance information and the amount of the data included in the advertisement performance information.

134. (Previously Presented) The apparatus of claim 125, wherein the advertisement for which the initial advertisement performance information is modified is included with the forwarded advertisements.

135. (Previously Presented) The apparatus of claim 125, wherein the advertisement for which the initial advertisement performance information is modified is different from the forwarded advertisements.

136. (Previously Presented) The apparatus of claim 125, wherein the one or more processors are configured to forward, based on the modified advertisement performance information, at least one of the advertisements by:

comparing the modified advertisement performance information for an advertisement to a threshold;
determining that the modified advertisement performance information exceeds the threshold; and

forwarding the advertisement based on the modified advertisement performance information exceeding the threshold.

137. (Previously Presented) The apparatus of claim 125, wherein the one or more processors are configured to:

identify the one or more content concepts to which the document is relevant by identifying a first concept and a second concept to which the document is relevant; and

determine that an advertisement is associated with the first concept and the second concept for the document.

138. (Previously Presented) The apparatus of claim 125, wherein the one or more processors are configured to:

receive the initial advertisement performance information for the advertisements by receiving advertisement targeting information for the advertisements; and
receive the concept performance information by receiving concept targeting performance information representing an aggregate performance of advertisements targeted according to the advertisement targeting information that were presented with the document based on the advertisement targeting information.

139. (Previously Presented) The apparatus of claim 125, wherein the one or more processors are further configured to:

identify a first advertisement that does not have initial advertisement performance information;
determine that at least one of the identified concepts for the document correspond to the first advertisement;

receive concept performance information for the at least one of the one identified concepts corresponding to the first advertisement; and

determine, based on the received concept information for the at least one of the identified concepts associated with the first advertisement, estimated advertisement performance information for the first advertisement.

140. (Previously Presented) The apparatus of claim 139, wherein the one or more processors are configured to determine the estimated advertisement performance information for the first advertisement by determining a weighted-sum of the content concept information for the at least one of the identified concepts corresponding to the first advertisement.

141. (Previously Presented) A storage device storing a computer program comprising one or more code segments that, when executed, cause at least one processor to:

- identify advertisements that are available for presentation with a document;
- receive initial advertisement performance information for the advertisements, the advertisement performance information for each advertisement specifying a measure of performance computed based on previous presentations of the advertisement;
- identify one or more concepts to which the document is relevant, concepts being identified based on content of the document;
- receive, for each identified concept for the document, concept performance information representing an aggregate performance of advertisements that were presented with the document and corresponding to the concept;

modify the initial advertisement performance information for an advertisement using the concept performance information for an identified concept corresponding to the advertisement; and

forward, based on the modified advertisement performance information, at least one of the advertisements.

142. (Previously Presented) The storage device of claim 141, wherein the advertisement performance information includes selection information and impression information for advertisements.

143. (Previously Presented) The storage device of claim 141, wherein the document is a Web page identified by a URL.

144. (Previously Presented) The storage device of claim 141, wherein the one or more code segments that, when executed, cause the at least one processor to modify the initial advertisement performance information for an advertisement comprises one or more code segments that, when executed, cause the at least one processor to:

select identify an identified concept to which the advertisement corresponds; and receive concept performance information for the selected concept, the content performance information being computed based on performance of other advertisements that were presented with the document and correspond to the selected concept.

145. (Previously Presented) The storage device of claim 141, wherein the one or more code segments that, when executed, cause the at least one processor to receive, for each identified concept for the document, the concept performance information comprise one or more code segments that, when executed, cause the at least one processor to determine, for each identified concept for the document, concept performance information using document specific advertisement performance information for the identified advertisements corresponding to the identified concept.

146. (Previously Presented) The storage device of claim 145, wherein the one or more code segments that, when executed, cause the at least one processor to:
determine, for each identified concept for the document, document specific advertisement performance information for a first advertisement and a second advertisement; and
determine, for each identified concept for the document, concept performance information using the document specific advertisement performance information for the first advertisement and the second advertisement corresponding to the identified concept.

147. (Previously Presented) The storage device of claim 141, wherein the concept performance information for a concept includes one or more of selection information and impression information for advertisements presented with the document and corresponding to the concept.

148. (Previously Presented) The storage device of claim 141, wherein the one or more code segments further comprise one or more code segments that, when executed, cause the at least one processor to determine a confidence measure for the advertisement performance information, the confidence measure representing a confidence level for the advertisement performance information relative to other advertisement performance information.

149. (Previously Presented) The storage device of claim 148, wherein the one or more code segments that, when executed, cause the at least one processor to determine the confidence measure for the advertisement performance information comprise one or more code segments that, when executed, cause the at least one processor to determine a confidence measure for the advertisement performance information based on one or more of the age of data included in the advertisement performance information and the amount of the data included in the advertisement performance information.

150. (Previously Presented) The storage device of claim 141, wherein the advertisement for which the initial advertisement performance information is modified is included with the forwarded advertisements.

151. (Previously Presented) The storage device of claim 141, wherein the advertisement for which the initial advertisement performance information is modified is different from the forwarded advertisements.

152. (Previously Presented) The storage device of claim 141, wherein the one or more code segments that, when executed, cause the at least one processor to forward, based on the modified advertisement performance information, the at least one of the one or more advertisements comprise one or more code segments that, when executed, cause the at least one processor to:

compare the modified advertisement performance information for an advertisement to a threshold;

determine that the modified advertisement performance information exceeds the threshold; and

forward the advertisement based on the modified advertisement performance information exceeding the threshold.

153. (Previously Presented) The storage device of claim 141, wherein the one or more code segments that, when executed, cause the at least one processor to:

identify the one or more content concepts to which the document is relevant comprise one or more code segments that, when executed, cause the at least one processor to identify a first concept and a second concept to which the document is relevant; and

determine that an advertisement is associated with the first concept and the second concept for the document.

154. (Previously Presented) The storage device of claim 141, wherein the one or more code segments that, when executed, cause the at least one processor to:

receive the initial advertisement performance information for the advertisements comprise one or more code segments that, when executed, cause the at least one processor to receive advertisement targeting information for the advertisements; and

receive the concept performance information comprise one or more code segments that, when executed, cause the at least one processor to receive concept targeting performance information representing an aggregate performance of advertisements targeted according to the advertisement targeting information that were presented with the document based on the advertisement targeting information.

155. (Previously Presented) The storage device of claim 141, wherein the one or more code segments further comprise one or more code segments that, when executed, cause the at least one processor to:

identify a first advertisement that does not have initial advertisement performance information;

determine that at least one of identified concepts for the document correspond to the first advertisement;

receive concept performance information for the at least one of the one identified concepts corresponding to the first advertisement; and

determine, based on the received concept information for the at least one of the identified concepts associated with the first advertisement, estimated advertisement performance information for the first advertisement.

156. (Previously Presented) The storage device of claim 155, wherein the one or more code segments that, when executed, cause the at least one processor to determine the estimated advertisement performance information for the first advertisement comprise one or more code segments that, when executed, cause the at least one processor to determine a weighted-sum of the content concept information for the at least one of the concepts corresponding to the first advertisement.

Applicant : Yingwei Claire Cui et al.
Serial No. : 10/649,585
Filed : August 27, 2003
Page : 33 of 34

Attorney's Docket No.: 16113-0760001

Evidence Appendix

None.

Applicant : Yingwei Claire Cui et al.

Serial No. : 10/649,585

Filed : August 27, 2003

Page : 34 of 34

Attorney's Docket No.: 16113-0760001

Related Proceedings Appendix

None.